

**"SUPER BROAD-BAND
POLARIZING REFLECTIVE MATERIAL"**

BACKGROUND OF THE INVENTION

Technical Field

10 The present invention relates generally to circularly
polarizing reflective material made from single layer
Cholesteric Liquid Crystal (CLC) film material having "super"
broad-band reflection and transmission band characteristics
approaching 2000nm, and also to various novel methods for
15 fabricating and using the same in diverse applications.

Background Art

In the modern world, there are numerous applications
which require circularly polarizing material having broad-band
20 reflection and transmission characteristics. Such applications
range from polarizing filters used in optical systems, to highly
reflective pigments used in the manufacture of CLC-based
paints and inks.

A detailed review of the prior art literature reveals that
25 European Patent Application 94200026.6 entitled "Cholesteric
Polarizer and Manufacture Thereof", published July 20, 1994
and assigned to Philips Electronics, N.V. of Eindhoven,
Netherlands (the "Phillips reference"), is the most relevant
prior art reference as it discloses several methods on how to
30 make a single layer CLC film material having broad-band
reflection and transmission characteristics. In order to achieve
its broad-band reflection and transmission characteristics,
which are limited to about 400nm, the Phillips disclosure

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abandoned,
07/96 is a continuation of application 09/066,403, 1
which is a continuation of application PCT/US96/17964 filed Nov,
8, 1996

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